

Claims

1 1. Multiband Radio System, comprising:

- a receiving branch (RX) and a transmitting branch (TX) respectively supporting more than one different frequency band,

characterized by

5 - a receiving/transmitting filter selector (RTFS) controlling radio frequency filters included within said receiving branch (RX) and said transmitting branch (TX), respectively, in receiving mode so that radio signals of a frequency band which are passed through in the receiving branch (RX) are blocked in the transmitting branch (TX).

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2. Multiband Radio System according to claim 1, **characterized in that**

- each of said receiving and transmitting branches (RX, TX) comprises at least two radio frequency filters (RF1, RF2; TF1, TF2) which comprise passband and stop band functions, whereby within each of said receiving and transmitting
15 branches (RX, TX) said passband and stop band functions of each of said radio frequency filters (RF1, RF2; TF1, TF2) are responsible for reception/transmission of a given frequency band being different from respective frequency bands of each of the other radio frequency filters (RF1, RF2; TF1, TF2), and

- in said receiving mode the receiving branch (RX) is switched into a state
20 for electrically connecting that radio frequency filter (RF1, RF2) being responsible for filtering radio signals of a first frequency band between into its RF path, and the transmitting branch (TX) is switched into a state for electrically connecting a respective other one of said radio frequency filters (TF1, TF2) being responsible for filtering radio signals of a second frequency band into its RF
25 path.

3. Multiband Radio System according to claim 1, **characterized in that**

- within each of said receiving and transmitting branches (RX, TX) said radio frequency filters (RF1, RF2; TF1, TF2) are arranged in parallel and between
30 at least one pair of multiplexer switches (RSW1, RSW2; TSW1, TSW2),

- said multiplexer switches (RSW1, RSW2; TSW1, TSW2) being actuated by means of a respective band selection signal,

- said receiving/transmitting filter selector (RTFS) receives a receive/transmit control signal (RTCS) and a primary band selection signal (BSS), and

- said receiving/transmitting filter selector (RTFS) outputting at least two

1 secondary band selection signals (BSS1, BSS2) being inputted to each of said
pairs of multiplexer switches (RSW1, RSW2; TSW1, TSW2) of a respective one of
said branches (RX, TX).

- in said receiving mode of said arrangement said secondary band selection
5 signals (BSS1; BSS2) controlling said pairs of multiplexer switches (RSW1,
RSW2; TSW1, TSW2), to which they are inputted, in a way that, in a case, where
a respective one of said secondary band selection signals (BSS1; BSS2) switches
one of said pairs of its associated pairs of multiplexer switches (RSW1, RSW2;
TSW1, TSW2) in a respective one of said branches (RX, TX) into a state for
10 electrically connecting that radio frequency filter (RF1, RF2; TF1, TF2) being
responsible for filtering radio signals of a first frequency band between said pair
of multiplexer switches (RSW1, RSW2; TSW1, TSW2), at least one of the rest of
said secondary band selection signals (BSS2; BSS1) switching said respective
pairs of multiplexer switches (TSW1, TSW2; RSW1, RSW2) of the respective other
15 one of said branches (TX; RX) into a state for electrically connecting the radio
frequency filter (TF1, TF2; RF1, RF2) being responsible for filtering radio signals
of a second frequency band between said multiplexer switches (TSW1, TSW2;
RSW1, RSW2).

20 4. Multiband Radio System according to claim 1, **characterized in**
that

- said receiving branch (RX) further comprises a demodulator (RSW) for
downconverting a received RF signal to IF and said transmitting branch (TX)
further comprises a modulator (TSW) for upconverting an IF signal to be trans-
25 mitted to RF.

- either one of said demodulator (RSW) and said modulator (TSW) receives a
carrier signal output from an oscillator (CS) via a receive/transmit switch
(RTSW) which is actuated by a receive/transmit control signal (RTCS).

30 5. Multiband Radio System according to claim 1, **character-**
ized in that

- it is a HiperLAN or an IEEE802 system.

35 6. Method for operating a multiband radio system comprising a receiving
branch (RX) and a transmitting branch (TX) **characterized by** controlling radio
frequency filters included within said receiving branch (RX) and said transmit-
ting branch (TX), respectively, in receiving mode so that radio signals of a fre-

1 quency band which are passed through in the receiving branch (RX) are blocked
in the transmitting branch (TX).

7. Method according to claim 6, **characterized by**, in a receiving mode of
5 said multiband radio system, the steps of connecting, in each of said receiving
and transmitting branches (RX, TX), one of at least two radio frequency filters
(RF1, RF2; TF1, TF2) having a stop band function for given frequency bands,
said frequency bands being different from each other, between a respective pair
of at least one pair of multiplexer switches (TSW1, TSW2; RSW1, RSW2) for se-
10 lecting a respective one of said radio frequency filters (RF1, RF2; TF1, TF2).

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